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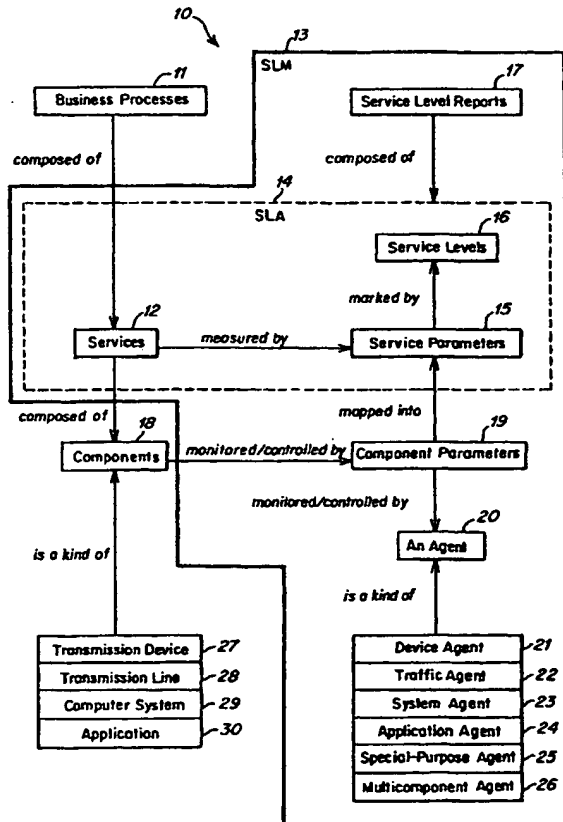
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(54) Title: SERVICE LEVEL MANAGEMENT



(57) Abstract: Method and apparatus for service level management, wherein business processes are composed of services. A state of the service is defined by one or more service parameters, and the service parameters depend upon performance of network components that support the service, e.g., component parameters. The state of the service may depend, for example, on a collection of service parameter values for availability, reliability, security, integrity and response time. A service level agreement is a contract between a supplier and a customer that identifies services supported by a network, service parameters for the services, and service levels (e.g., acceptable levels) for each service parameter.



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INTERNATIONAL SEARCH REPORT

International Application No PCT/US 00/14175		
A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06F17/60 H04L12/24 H04L12/26		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G06F H04L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) INSPEC, EPO-Internal, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	L. LEWIS: "Spectrum Service Level Management Definition, Offerings, and Strategy" TECHNICAL NOTE LML-CTRON-98-02, 'Online! 30 March 1998 (1998-03-30), pages 1-17, XP002150696 US Retrieved from the Internet: <URL:www.aprisma.com/white-papers/spectrum/slm.pdf> 'retrieved on 2000-10-18! the whole document	1-29, 37-50, 95,96, 99-102, 104, 107-119
Y	--- -/--	32-35,53
<div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. </div>		
<div style="display: flex;"> <div style="flex: 1;"> <p>* Special categories of cited documents :</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="flex: 1;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*&* document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search <div style="text-align: center; font-weight: bold;">6 February 2001</div>		Date of mailing of the international search report <div style="text-align: center; font-weight: bold;">08. 03. 2001</div>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer <div style="text-align: center; font-weight: bold;">Herreman, G</div>

INTERNATIONAL SEARCH REPORT

Int .tional Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KUBO K ET AL: "A METHOD OF EXTRACTING MANAGEMENT INFORMATION FOR SERVICE MANAGEMENT" NTT REVIEW, JP, TELECOMMUNICATIONS ASSOCIATION, TOKYO, vol. 10, no. 2, 1 March 1998 (1998-03-01), pages 63-68, XP000740456	1-3, 7-10, 14, 15, 19-22, 25, 28, 37, 39, 41-50, 78, 79, 81, 82, 95-97, 99, 107, 110
Y A	the whole document	83-94 13, 18, 32-35, 98, 101, 102, 104, 115
X	LEWIS L ET AL: "Incorporating business process management into network and systems management" PROCEEDINGS - ISADS 97 - THIRD INTERNATIONAL SYMPOSIUM ON AUTONOMOUS DECENTRALIZED SYSTEMS (CAT. NO. 97TB100111), PROCEEDINGS OF THE THIRD INTERNATIONAL SYMPOSIUM ON AUTONOMOUS DECENTRALIZED SYSTEMS. ISADS 97, BERLIN, GERMANY, 9-11 APRIL 1997, pages 385-392, XP002150698 1997, Los Alamitos, CA, USA, IEEE Comput. Soc. Press, USA ISBN: 0-8186-7783-X	30, 31, 36, 41, 51, 52, 54, 55, 62-68, 72, 73, 105, 106
Y	the whole document	32-35, 53
X	L. LEWIS: "Event Correlation in SPECTRUM and Other Commercial Products" TECHNICAL NOTE CTRON-LML-99-05, 'Online! 5 May 1999 (1999-05-05), pages 1-8, XP002159591 US Retrieved from the Internet: <URL:http://www.aprisma.com/white-papers/s pectrum/event-correlation.pdf> 'retrieved on 2001-02-06!	30, 31, 51, 62-68, 72, 73, 95, 98, 103
Y A	the whole document	93 52, 54, 55, 61, 74, 76, 77, 83-87, 91, 99-102, 105, 106

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INTERNATIONAL SEARCH REPORT

In International Application No
PCT/US 00/14175

C.(Continuation) D CUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 854 605 A (SUN MICROSYSTEMS INC) 22 July 1998 (1998-07-22) abstract column 4, line 53 -column 6, line 3; claims 1-4,14,15	83-92,94
X	L. LEWIS: "Managing Computer Networks: A Case-Based reasoning Approach " 1995 , ARTECH HOUSE, INC , NORWOOD, MA, US XP002159593 ISBN: 0-89006-799-6	30,31, 51-61
A	Chapter 5: Case-Based Reasoning in Network Fault Management Systems; and Chapter 6: Implementing Case-Based Reasoning in Network Fault Management Systems page 121, line 1 -page 134, line 33 page 137, line 17 -page 142, last line page 167, line 1 -page 191, line 3	1-29, 62-120
X	WO 93 10495 A (CABLETRON SYSTEMS INC) 27 May 1993 (1993-05-27)	78,79, 81,82
A	page 16, line 15 -page 34, line 15; figures 7A-10	30-36, 51-77, 80, 83-94, 97,98, 103,105, 106,120
A	"SAMAN Strategic Service Management" GECKO SOFTWARE SAMAN WHITEPAPER, 'Online! 1997, pages 1-5, XP002150697 Retrieved from the Internet: <URL:http://www.geckoware.com/products/s00 01-w1.htm> 'retrieved on 2000-10-18! the whole document	1-29, 37-50, 78-82, 95,96, 99-102, 104, 107-120
A	L. LEWIS: "A fuzzy logic representation of knowledge for detecting/correcting network performance deficiencies" NETWORK MANAGEMENT AND CONTROL, vol. 2, 1994, pages 1-7, XP002159592	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/14175

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-29, 37-50, 95-96, 99-102, 104, 107-119

System and method for business process monitoring and management, for service level management, for network monitoring and management

2. Claims: 30-36, 51-77, 105-106

Method, system and program for network management with alarm correlation.

3. Claims: 78-82, 120

Display for displaying services

4. Claims: 83-94, 97, 98, 103

Network management method with degraded service analysis

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 00/14175

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 854605 A	22-07-1998	US 5845081 A	01-12-1998
		JP 10105482 A	24-04-1998
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		US 6049828 A	11-04-2000
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		US 5751933 A	12-05-1998
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